

John please

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*Process of purification/separation
of Vit D₃ or pre vit. D₃ from mixtures*

Please see attached sheets.

Point of Contact:
John Dantzman
Technical Info. Specialist
CM1 1E05 Tel: 308-4488

Priority 98111490.3 6/23/98

Inventors: Monika Johannsen

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=> D HIS

(FILE 'HCAPLUS' ENTERED AT 08:33:24 ON 07 AUG 1999)
DEL HIS Y

FILE 'REGISTRY' ENTERED AT 08:36:53 ON 07 AUG 1999
E VITAMIN D3/CN

L1 31 S VITAMIN D3?/CN

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L13 2 S L11 AND (CO2 OR CARBON DIOXIDE OR L12)

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L15 79 S L11 AND (SILICA GEL OR SIO2 OR SILICA)

L16 2 S L15 AND IRRADIAT?

L17 1419 S (L3-L5) (9A) (PRODUC? OR PURIF? OR ISOLN OR ISOLAT? OR
SEPARAT

L18 213 S L10 AND L17

L19 15 S L17 (9A) (COL OR COLUMN) (2A) (CHROMAT?)

L20 54 S L17 (9A) ((LIQ OR LIQUID) (2A) (CHROMAT?))

L21 40 S L17 (9A) HPLC

L22 96 S L19-L21

L23 21 S L22 AND (SILICA GEL OR SIO2 OR SILICA)

L24 0 S L23 AND IRRADIAT?

FILE 'LIFESCI, SCISEARCH, WPIDS, JICST-EPLUS' ENTERED AT 08:50:09 ON 07
AUG 1999

L25 5555 S (VITAMIN OR PREVITAMIN) (W) (D3 OR D 3)

L26 329 S L25 (9A) (PRODUC? OR PURIF? OR ISOLN OR ISOLAT? OR SEPARAT?

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L27 3 S L26 (9A) (COL OR COLUMN) (2A) (CHROMAT?)

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HP

L31 0 S L30 AND (CO2 OR CARBON DIOXIDE)

L32 19 S L27-L29

L33 19 DUP REMOV L32 (0 DUPLICATES REMOVED)

=> D L16 1-2 BIB ABS

L16 ANSWER 1 OF 2 HCAPLUS COPYRIGHT 1999 ACS

AN 1990:598104 HCAPLUS

DN 113:198104

TI HPLC determination of vitamin D preparation

AU Zhang, Yi; Yang, Gang; Ding, Yinfen; Chen, Rujin

CS Fujian Prov. Inst. Drug Control, Fuzhou, 350000, Peop. Rep. China

SO Zhongguo Yiyao Gongye Zazhi (1990), 21(6), 256-61

CODEN: ZYGZEA

DT Journal

LA Chinese

AB In the column system suitability test following irradiation of heated **vitamin D3** soln. by UV with main wave length 254 and 365 nm for 5 min, 6 isomers were separated with the normal-phase HPLC (Waters Resolve **Silica** column, 0.3% n-pentanol in hexane as mobile phase, detected at 254 nm), with resolution factor, R, >1.0. The linearity was obtained in 0.5-60 μ g **vitamin D3**. The low concentration (1 ppm) preparation could be detected by internal (di-Me phthalate) method or external (thermal equilibrium) method with error 10%. The error in detection of high-concentration preparation was 3%.

L16 ANSWER 2 OF 2 HCAPLUS COPYRIGHT 1999 ACS

AN 1983:214238 HCAPLUS

DN 98:214238

TI Individual quantitation of vitamin D2, **vitamin D3**, 25-hydroxyvitamin D2, and 25-hydroxyvitamin D3 in human milk

AU Hollis, Bruce W.

CS Sch. Med., Case Western Reserve Univ., Cleveland, OH, 44106, USA

SO Anal. Biochem. (1983), 131(1), 211-19

CODEN: ANBCA2; ISSN: 0003-2697

DT Journal

LA English

AB Extraction, lipid-reduction, and chromatographic methods suitable for the resolution and subsequent quantitation of vitamin D2 [50-14-6], **vitamin D3** [67-97-0], 25-hydroxyvitamin D2 [21343-40-8] and 25-hydroxyvitamin D3 [19356-17-3] from human milk are described. This procedure utilizes a MeOH:CH2Cl2 extraction, precipitation of unwanted

lipids with cold MeOH and Et2O, backwash with alkali buffer, **silica Sep-Pak** preparative chromatography, normal- and reverse-phase high-performance liquid chromatography with final quantitation of the antirachitic sterols by competitive protein binding assay. The described assay was used to detect these antirachitic sterols in milk from women receiving various supplements of vitamin D [1406-16-2] or undergoing UV phototherapy.

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L33 19 DUP REMOV L32 (0 DUPLICATES REMOVED)

=> D L23 BIB ABS HITRN 1-21

L23 ANSWER 1 OF 21 HCAPLUS COPYRIGHT 1999 ACS

AN 1998:300990 HCAPLUS

DN 128:319005

TI Aminopropyl-**silica** as an advantageous alternative to nonpolar sorbents for continuous cleanup/preconcentration of vitamin D3 metabolites

AU Ortiz Boyer, F.; Fernandez Romero, J. M.; Luque de Castro, M. D.; Quesada, J. M.

CS Dep. Analytical Chemistry, Fac. Sci., Univ. Cordoba, Cordoba, E-14004, Spain

SO Chromatographia (1998), 47(7/8), 367-372

CODEN: CHRGB7; ISSN: 0009-5893

PB Friedrich Vieweg & Sohn Verlagsgesellschaft mbH

DT Journal

LA English

AB A new procedure for continuous cleanup and concn. of **hydroxyvitamin D3** metabolites prior to their **sepn.** by HPLC and UV-detection is reported. The process is based on the use of aminopropyl-**silica** as solid-phase sorbent as an alternative to the use of non-polar sorbents. The improvement thus achieved was tested by comparing the results with those obtained using octadecyl-C18 as non-polar sorbent. The comparison was based on the calibration graphs (linear range, detection and quantitation limits), precision and multiple std. addn. method.

L23 ANSWER 2 OF 21 HCAPLUS COPYRIGHT 1999 ACS

AN 1995:291901 HCAPLUS

DN 122:131343

TI Determination of vitamin D3 in fish meals by HPLC.

AU Horvli, Ole; Lie, Oeyvind

CS Institute Nutrition, Directorate Fisheries, Bergen, N-5024, Norway

SO Fiskeridir. Skr., Ser. Ernaer. (1994), 6(2), 163-75

CODEN: FSSEDG; ISSN: 0332-5083

DT Journal

LA English

AB An HPLC method for the **sep.** anal. of vitamin D2 or **vitamin D3**, using the alternate form as an internal std. and UV-detection, is described. The method involves sapon. and extn. of small samples (0.25 g) in small tubes (10 mL), sample clean-up on a **silica** column, and anal. on a C18-column, both by HPLC. The limit of detection was 1.3 ng, or 5.2ng/g sample. The intra-assay precision (CV) was 5.6% (n=8), and the accuracy was $\pm 0.17\%$ deviation from a std. Fifteen fish meals were analyzed for vitamin D3 by the method described, the samples were also detd. by a chick bioassay method.

L23 ANSWER 3 OF 21 HCAPLUS COPYRIGHT 1999 ACS

AN 1994:69719 HCAPLUS

DN 120:69719

TI Scintillation proximity assay for calcitriol in serum without high pressure liquid chromatography

AU Wildermuth, Susanne; Dittrich, Karin; Schmidt-Gayk, Heinrich; Zahn, Ingrid; O'Riordan, J. L. H.

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308-4488

CS Univ. Heidelberg, Heidelberg, Germany
SO Clin. Chim. Acta (1993), 220(1), 61-70
CODEN: CCATAR; ISSN: 0009-8981

DT Journal

LA English

AB A rapid **isolation** step for 1,25-dihydroxyvitamin D3 without high pressure liq. chromatog. (HPLC) and a sensitive RIA have been developed. The time required for extn. and isolation with a combination of Extrelut-1-minicolumns and SepPak **silica** cartridges from as little as 0.5 mL serum is only 2 h. The assay can be counted after 8 h of incubation. It is performed in the vial that collects the eluate, thus eliminating transfer losses

and

errors. No sepn. of bound and free hormone is necessary before .beta.-counting in the scintillation proximity assay. The detection limit

of the assay is 2.7 ng/L. The intraassay coeffs. of variation are 7.3% and 5.2% for samples with calcitriol concns. of 31 and 148 ng/L, resp. The interassay coeffs. of variation are 11.3%, 13.3% and 16.1% for low

(16

ng/L), medium (30 ng/L) and high (148 ng/L) control pool samples, resp. Normal values for calcitriol range from 32 to 80 ng/L. Elderly subjects, patients with reduced kidney function, and pregnant women were also evaluated for their calcitriol levels. This assay correlates well with a RIA employing HPLC prepurifn. and charcoal sepn. of bound/free calcitriol ($r = 0.94$).

L23 ANSWER 4 OF 21 HCAPLUS COPYRIGHT 1999 ACS

AN 1992:446862 HCAPLUS

DN 117:46862

TI Reversed-phase liquid chromatographic determination of vitamin D in infant

formulas and enteral nutritionals

AU Sliva, Matthew G.; Green, Astor E.; Sanders, James K.; Euber, John R.; Saucerman, Janice R.

CS Bristol-Myers Squibb, Evansville, IN, 47721-0001, USA

SO J. AOAC Int. (1992), 75(3), 566-71

CODEN: JAINEE

DT Journal

LA English

AB Vitamin D in infant formulas and enteral nutritional products was detd. by

reversed-phase liq. chromatog. (LC) with UV detection at 265 nm. The sample was sapond. 30 min at 60.degree. and extd. into 60 mL hexane. The hexane layer was then washed and evapd. to dryness. The sample was reconstituted and added to a 3 mL **silica** solid-phase extn. column. Vitamin D2 and D3 were eluted from the column with 7 mL

methylene

chloride-isopropanol mixt. (99.8 + 0.2). The eluent was evapd. to dryness

and reconstituted in 1 mL acetonitrile. The acetonitrile soln. was analyzed on a C18 reversed-phase LC column (Vydac 20ITP54, 25 cm .times. 4.6 mm, 5 .mu.m particle size); sepn. required a column that was not endcapped. Linearity for this method between 8 and 2600 IU/qt showed a coeff. of detn. of 1.000, with method precision ranging 1-6%. Spike recoveries gave a mean of 99.1%. Because this method can quantitate and distinguish between vitamin D2 and vitamin D3 in products, vitamin D2 was

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used as an internal std. in quantitating vitamin D3, and vice versa. The sample throughput was estd. to be 24 per day. The method is applicable to milk-, soy-, and protein hydrolyzate-based infant formulas and enteral nutrition products, both liq. and powder.

L23 ANSWER 5 OF 21 HCAPLUS COPYRIGHT 1999 ACS

AN 1990:402755 HCAPLUS

DN 113:2755

TI Extraction and chromatographic **separation** of 1,25-dihydroxy-vitamin D3 from blood serum or plasma without high-performance **liquid chromatography** (HPLC)

AU Armbruster, Franz Paul; Tampe, J.; Mueller, K. B.; Wiese, P.; Reichel, H.;

Schmidt-Gayk, H.

CS Immundiagn. G.m.b.H., Bensheim, D-6140, Fed. Rep. Ger.

SO Aerztl. Lab. (1990), 36(4), 75-80

CODEN: AELAAB; ISSN: 0001-9526

DT Journal

LA German

AB 1,25-(OH)2-Vitamin D3 (I) was detd. in human blood plasma or serum by extn. on Extrelut-1 minicolumns with iPr2O, evapn. of the ext., and chromatog. sepn. from 25-(OH)-, 24,25-(OH)-, and 25,25-(OH)2-derivs. (II, III, resp.) either with disposal aminopropyl columns or Sep-Pak SiO2 gel cartridges. For the former, an iPrOH/nC6H14 stepped gradient with iPrOH levels rising from 0.5-25% was employed as eluent, giving recoveries of 84, 0.7, 0.8, and 21% for I, II, III, and IV, resp. For the latter, a 4/96 iPrOH/nC6H4 mixt. was employed to elute II and III and a 275/75 mixt. for I. Recoveries for I, II, and III were 74.6, 0.5, and 4%, resp. Since the latter method does not require evapn. following Extrelut extn., it is better suited for routine, lab. detns.

L23 ANSWER 6 OF 21 HCAPLUS COPYRIGHT 1999 ACS

AN 1989:611291 HCAPLUS

DN 111:211291

TI Retention behavior of lipophile components in biological substances in **silica gel** liquid chromatography using aqueous binary solvent systems

AU Hara, Shoji; Ando, Tatsuhiko; Nakayama, Yoshiyuki

CS Tokyo Coll. Pharm., Tokyo, 192-03, Japan

SO Yakugaku Zasshi (1989), 109(9), 650-5

CODEN: YKKZAJ; ISSN: 0031-6903

DT Journal

LA Japanese

AB A high-performance liq.-liq. partition chromatog. system involving two immiscible liq. phases, water and a binary org. solvent, was made from a slurry packed **silica gel** column, operated by a droplet current to pump the org. solvent equilibrated at the same time as the water and a UV detector provided with a flow-type cell. The binary org. solvent, water satd. and contg. di-Et ether or ethanol in n-hexane as a phase system was used for the measurement of the retention indexes of lipophilic components in biol. substances such as cholesterol esters, lipophilic vitamins, and steroid hormones. The mol. structure of each solute was correlated to its resp. retention index by a linear relation between the logarithm of the capacity ratio and that of solvent compn. in the mobile phase solvent. The retention data thus obtained were directly related to the liq.-liq. distribution coeff. and thus applicable to

making

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308-4488

the better selection of an appropriate optimum phase system for use in solvent extn. processes.

IT 67-97-0, Cholecalciferol
RL: ANST (Analytical study)
(sepn. of, by liq.-liq. partition
chromatog., retention behavior in)

L23 ANSWER 7 OF 21 HCAPLUS COPYRIGHT 1999 ACS

AN 1989:133796 HCAPLUS

DN 110:133796

TI Simultaneous analysis of fat-soluble vitamins in foods and vitamin products by high-performance liquid chromatography

AU Kim, Poongzag; Kim, Chong Hyeak

CS Anal. Res. Support Sect., Korea Res. Inst. Chem. Technol., Daejeon, 302-343, S. Korea

SO Taehan Hwahakhoe Chi (1989), 33(1), 46-54

CODEN: DHWHAB; ISSN: 0418-2472

DT Journal

LA Korean

AB The extn. method and quant. anal. for the fat-sol. vitamins present in foods and vitamin products were investigated. The simultaneous sepn. and anal. of the vitamins by reverse-phase high-performance liq. chromatog. was conducted by using an isocratic elution with MeOH-H₂O (95:5) on a Novapak C18 column. The detection of vitamins was achieved by a variable wavelength UV detector. To improve the sensitivity, detection

wavelengths

were set at the highest absorption bands (e.g. 330, 265, 285, and 290 nm) for the resp. vitamins. The anal. was finished within 40 min. Alk. hydrolysis and enzymic hydrolysis were investigated for sample prepn.; liq.-liq. extn. and liq.-solid extn. were attempted for the vitamins. Both hydrolysis methods were appropriate for the anal. of vitamins A, D, and E, while for the anal. of vitamin K the enzymic hydrolysis method demonstrated better results. Di-Et ether, pentane, and hexane gave the best recovery for the liq.-liq. extn. and a silica cartridge was used for the liq.-solid extn.

IT 67-97-0, Vitamin D3

RL: ANT (Analyte); ANST (Analytical study)

(detn. of, in food and vitamin products by reverse-phase
HPLC with UV detection)

L23 ANSWER 8 OF 21 HCAPLUS COPYRIGHT 1999 ACS

AN 1987:631849 HCAPLUS

DN 107:231849

TI A new tritium-release assay for 25-hydroxyvitamin D-1.alpha.-hydroxylase

AU Brown, Alex J.; Perlman, Kato; Schnoes, Heinrich K.; DeLuca, Hector F.

CS Coll. Agric. Life Sci., Univ. Wisconsin, Madison, WI, 53706, USA

SO Anal. Biochem. (1987), 164(2), 424-9

CODEN: ANBCA2; ISSN: 0003-2697

DT Journal

LA English

AB A new, rapid assay for 1.alpha.-hydroxylase (I) was developed using 25-hydroxy-[1.alpha.-³H]vitamin D3 as the substrate. Using the solubilized and reconstituted chick I, conversion of this substrate to 1,25-dihydroxyvitamin D3 causes the release of tritium into the aq. medium. This ³H₂O can be easily sepd. from the labeled substrate by passing the reaction mixt. through a reverse-phase silica cartridge. The release of tritium is stereospecific as evidenced by the

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lack of 3H₂O formed when 25-hydroxy-[1.β.-3H]vitamin D₃ is used as the substrate. In parallel reactions contg. the 25-hydroxy-[26,27-3H]vitamin D₃ substrate, **prodn.** of labeled 1,25-**dihydroxyvitamin D₃** was assessed by extn. and **HPLC** and found to agree very closely with the amt. of 3H₂O produced from 25-hydroxy-[1.α.-3H]vitamin D₃, validating the accuracy of the new assay. Finally, a major advantage of the tritium-release assay for I is that the results are not affected by further metab. of the 1,25-dihydroxyvitamin D formed in the incubations.

- L23 ANSWER 9 OF 21 HCAPLUS COPYRIGHT 1999 ACS
AN 1987:623363 HCAPLUS
DN 107:223363
TI Separation of fat-soluble vitamins with polymer-coated **silica**-based octadecyl bonded phase in reversed-phase liquid chromatography
AU Wahyuni, W. T.; Jinno, K.
CS Sch. Mater. Sci., Toyohashi Univ. Technol., Toyohashi, 440, Japan
SO HRC CC, J. High Resolut. Chromatogr. Chromatogr. Commun. (1987), 10(8), 464-5
CODEN: HCJCDB; ISSN: 0344-7138
DT Journal
LA English
AB Reversed-phase liq. chromatog. on a polymer-coated **silica**-based C-18 stationary phase with MeOH-MeCN (25:75) as mobile phase enables a complete sepn. of fat-sol. vitamins D₂, D₃, E, and E acetate.
IT **67-97-0, Vitamin D₃**
RL: ANST (Analytical study)
(sepn. of, by reversed-phase **HPLC**, polymer-coated **silica**-based octadecyl bonded phase in)
- L23 ANSWER 10 OF 21 HCAPLUS COPYRIGHT 1999 ACS
AN 1987:77989 HCAPLUS
DN 106:77989
TI Separation of photoisomers of provitamin D₃ by chromatographic methods
AU Reichenbaecher, Manfred; Grosser, Marianne; Gliesing, Sabine; Fassler, Dieter; Matthey, Maria
CS Sekt. Chem., Friedrich-Schiller-Univ., Jena, Ger. Dem. Rep.
SO Z. Chem. (1986), 26(9), 332-3
CODEN: ZECEAL; ISSN: 0044-2402
DT Journal
LA German
AB **Provitamin D₃, previtamin D₃, lumisterol₃, tachysterol₃, and vitamin D₃** were **sepd.** by **HPLC** and thin-layer chromatog. The stationary phases were Sephadex LH-20 and **silica gel**. Various solvent compns. were tested.
- L23 ANSWER 11 OF 21 HCAPLUS COPYRIGHT 1999 ACS
AN 1986:564190 HCAPLUS
DN 105:164190
TI Isomer separation by reversed-phase liquid chromatography using 2-(1-pyrenyl)ethyl-bonded stationary phase. Separation of unsaturated compounds
AU Tanaka, Nobuo; Tachibana, Yuji; Araki, Mikio
CS Fac. Text. Sci., Kyoto Inst. Technol., Kyoto, 606, Japan
SO Nippon Kagaku Kaishi (1986), (7), 993-8

Searched by John Dantzman 308-4488

CODEN: NKAKB8; ISSN: 0369-4577

DT Journal

LA Japanese

AB Sepns. of positional isomers and geometrical isomers of unsatd. compds. were examd. by using octadecylsilylated (C18) phase and 2-(1-pyrenyl)ethylsilylated (PYE) phase on **silica gel** in reversed-phase liq. chromatog. The C18 phase showed preferential retention of solutes with double bonds at an internal position and with E configuration. The results can be explained in terms of the hydrophobic property of each solute. The interaction between double bonds in a

solute

and pyrene rings of the PYE phase contributed to the unique selectivity of

this stationary phase. Stronger interactions were obsd. with a double bond at a terminal position and with an internal double bond with Z configuration. The tendency can be explained by the steric effect of substituents on the sp² C atoms. The electronic interaction was pronounced in a mobile phase of high MeOH contents, because of the smaller

contribution of hydrophobic interaction in such a mobile phase. In the case of unsatd. carboxylic acid derivs., the PYE phase showed preferential

retention for solutes possessing double bonds away from the carboxyl group, and provided sepn. between linolenic acid and .gamma.-linolenic acid, which cannot be sepd. by the C18 phase. The complementary use of the PYE phase, which has widely different selectivity, with the C18 phase will increase the capability of reversed-phase liq. chromatog.

IT 67-97-0

RL: ANST (Analytical study); PROC (Process)

(sepn. of, from vitamin D2 by reversed-phase liq.

chromatog. on pyrenylethylsilylated stationary phase)

L23 ANSWER 12 OF 21 HCAPLUS COPYRIGHT 1999 ACS

AN 1985:610225 HCAPLUS

DN 103:210225

TI Improved chromatographic determination of 25-hydroxyvitamins D2 and D3

AU Coldwell, Ruth D.; Trafford, David J. H.; Makin, Hugh L. J.

CS Med. Coll., London Hosp., London, E1 2AD, UK

SO Clin. Chem. (Winston-Salem, N. C.) (1985), 31(11), 1919-20

CODEN: CLCHAU; ISSN: 0009-9147

DT Journal

LA English

AB A liq. chromatog. method is described for the detn. of 25-hydroxyvitamin D2 and 25-hydroxyvitamin D3 in plasma which does not require 2 liq. chromatog. steps and does not give rise to contaminating peaks. The method involves extn. and preliminary purifn. by chromatog. on cartridges prepacked with microparticulate **silica**, followed by conversion to isotachysterol isomers and straight-phase HPLC with UV detection at

301

nm (a secondary absorption max.), thus eliminating interference by unconverted 25-hydroxyvitamin D. The detection limit for 25-hydroxyvitamin D3 was 0.5 .mu.g/L in 2 mL plasma.

L23 ANSWER 13 OF 21 HCAPLUS COPYRIGHT 1999 ACS

AN 1985:403068 HCAPLUS

DN 103:3068

TI Comparison of **HPLC separation of vitamin**

Searched by John Dantzman

308-4488

- D3 metabolites and their isotachysterol3 derivatives**
AU Koskinen, Timo; Valtonen, Pirjo
CS Dep. Clin. Sci., Univ. Tampere, Tampere, SF-33520, Finland
SO J. Liq. Chromatogr. (1985), 8(3), 463-72
CODEN: JLCHD8; ISSN: 0148-3919
DT Journal
LA English
AB Sepn. of vitamin D3, its 4 metabolites and their corresponding isotachysterol3 derivs. was studied by using 4 HPLC systems: two reversed phase columns, a **silica** column and a cyanopropyl **silica** column. Most of them gave a good sepn. between the compds. studied, although both reversed phase systems were less efficient in the sepn. of dihydroxylated vitamin D3 metabolites and isotachysterol compds. Isotachysterol3 derivs. behaved analogously to their vitamin D3 counterparts on all 4 systems, but their retention times were different. This indicates that chem. derivatization to isotachysterols can be used
as a part of chromatog. identification of unknown vitamin D3 metabolites as well as in the detn. of major vitamin D3 compds. in biol. samples.
- L23 ANSWER 14 OF 21 HCAPLUS COPYRIGHT 1999 ACS
AN 1985:106428 HCAPLUS
DN 102:106428
TI **Separation of hydroxylated vitamin D3 metabolites by high-performance liquid chromatography**
AU Moysan, J. F.; Berthou, F.; Floch, H. H.
CS Lab. Biochim., Fac. Med. Brest, Brest, 29200, Fr. +
SO Pathol. Biol. (1984), 32(8), 825-7
CODEN: PTBIAN; ISSN: 0031-3009
DT Journal
LA French
AB The hydroxylated metabolites of **vitamin D3** were **sepd.** by normal-phase HPLC on Spherisorb 5SW-5, Radpak **silica**-10 .mu.m, and Zorbax **silica**-5 .mu.m columns and by reversed-phase HPLC on Vydac 201 TP C18-5 .mu.m, Radpak C18-10 .mu.m, and Ultraspher C18-5 columns. With the normal-phase chromatog. systems, the order of elution of the hydroxylated metabolites was
25-hydroxyvitamin D3 and (E)-25-hydroxyvitamin D3, then (24R), 25-dihydroxyvitamin D3, 25(S), 26-dihydroxyvitamin D3, and 1.alpha.,25-dihydroxyvitamin D3. However, this order of elution was variable with the Radpak **silica** column as a function of the nature of the mobile phase. The level of
MeOH in the mobile phase had a crit. effect on the sepn. and caused the appearance of perfectly sym. peaks. With the reversed-phase chromatog. systems, the order of elution of the metabolites was the opposite of the above elution order. In addn., the Z and E isomers of 25-hydroxyvitamin D3 could be sepd., in contrast to adsorption chromatog.
- IT **67-97-0D, hydroxylated metabolites**
RL: PROC (Process)
(sepn. of, by HPLC)
- L23 ANSWER 15 OF 21 HCAPLUS COPYRIGHT 1999 ACS
AN 1984:469885 HCAPLUS
DN 101:69885
TI Lipophilic conjugates of vitamin D3 in humans
AU Zagalak, B.; Neuheiser, F.; Curtius, H. C.
Searched by John Dantzman 308-4488

CS Dep. Clin. Chem., Univ. Zurich, Zurich, CH-8032, Switz.

SO Naturwissenschaften (1984), 71(6), 321-2

CODEN: NATWAY; ISSN: 0028-1042

DT Journal

LA English

AB Lipophilic conjugates of calciol (vitamin D₃; I) [67-97-0] represented 10-90% of total I in human urine in summer, and 15-25% of total I in human

blood serum. I excretion by adults was 0.1-7.0 .mu.g/day, and adults and children had 1-2 and 5-10 ng I/mL serum, resp. Blood serum and urine I (lipophilic) long-chain fatty acid (C16-24) esters (fraction A) were

sepd.

from I by **silica gel** column chromatog. plus gas chromatog.-mass spectrometric anal., and fraction B (calciol acetate [2871-23-0]) was **sepd.** by **HPLC**. Of total lipophilic I esters, .apprx.50% was represented by I acetate in human serum and urine, and the rest was long-chain fatty acid esters. Reasons for the existence of lipophilic I conjugates are discussed.

L23 ANSWER 16 OF 21 HCAPLUS COPYRIGHT 1999 ACS

AN 1984:452314 HCAPLUS

DN 101:52314

TI Formation of 19-nor-10-keto-25-hydroxyvitamin D₃ in cultured mammalian cells

AU Lester, Gayle E.; Horst, Ronald L.; Napoli, Joseph L.

CS Dep. Med., Univ. North Carolina, Chapel Hill, NC, 27514, USA

SO Biochem. Biophys. Res. Commun. (1984), 120(3), 919-25

CODEN: BBRCA9; ISSN: 0006-291X

DT Journal

LA English

AB Cultured dog kidney cells convert 25-hydroxyvitamin D [19356-17-3] into more polar metabolites during in vitro incubations. One elutes with 1,25-dihydroxyvitamin D₃ from high pressure liq. **chromatog.** **silica columns** with hexane-iso-PrOH (9:1), but can be **sepd.** from 1,25-**dihydroxyvitamin D₃** by elution with dichloromethane-iso-PrOH (95:5). This peak has been isolated, purified, and identified by mass spectral anal. to be 19-nor-10-keto-25-hydroxyvitamin D₃ [86852-07-5].

L23 ANSWER 17 OF 21 HCAPLUS COPYRIGHT 1999 ACS

AN 1983:606338 HCAPLUS

DN 99:206338

TI 24,25-**Dihydroxyvitamin D₃** in serum: sample **purification** with **Sep-Pak C-18** cartridges and **liquid chromatography** before protein-binding assay

AU Traba, M. L.; Babe, M.; De la Piedra, C.; Marin, A.

CS Unidad Metab., Fund. Jimenez Diaz, Madrid, Spain

SO Clin. Chem. (Winston-Salem, N. C.) (1983), 29(10), 1806-7

CODEN: CLCHAU; ISSN: 0009-9147

DT Journal

LA English

AB A 2-mL human serum sample was extd. with MeCN and passed through a **Sep-Pak**

C-18 cartridge. The sample was further purified by high-performance liq. chromatog. under isocratic conditions on a normal-phase column

(Radial-Pak

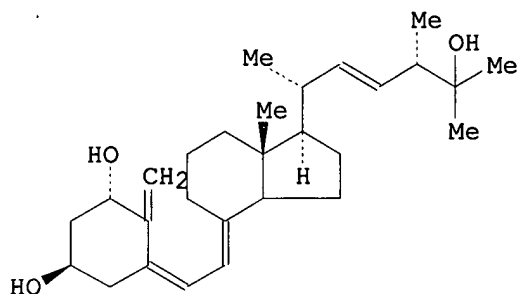
silica-gel cartridge), then subjected to a

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protein-binding assay. The mean concn. of 24,25-dihydroxyvitamin D3 [40013-87-4] in serum from normal adults (measured during the spring) was 2.9 .mu.g/L. The intra-assay relative std. deviation (rsd) was 7.7%; the interassay rsd was 11.2%. Purifn. of the sample with Sep-Pak C-18 and liq. chromatog. on normal plus reversed-phase columns led to a mean value of 3.4 .mu.g/L, not different from results with the given method.

L23 ANSWER 18 OF 21 HCAPLUS COPYRIGHT 1999 ACS
AN 1983:516270 HCAPLUS
DN 99:116270
TI Radioimmunoassay of 1,25-dihydroxyvitamin D2: studies on the metabolism of vitamin D2 in man
AU Fraher, L. J.; Adami, S.; Clemens, T. L.; Jones, G.; O'Riordan, J. L. H.
CS Dep. Med., Middlesex Hosp., London, W1, UK
SO Clin. Endocrinol. (Oxford) (1983), 19(2), 151-65
CODEN: CLECAP; ISSN: 0300-0664
DT Journal
LA English
GI



AB A sensitive RIA for 1,25-dihydroxyvitamin D2 (I) [55248-15-2] was developed using a sheep antiserum which preferentially reacts with 1-hydroxylated forms of vitamin D. An improved isolation procedure was also developed using acetonitrile for the initial extn. of serum followed by chromatog. on cartridges of C18 silica and high-pressure liq. chromatog. eluted with a ternary solvent system to sep. I and 1,25-dihydroxyvitamin D3 [32222-06-3]. 25-Hydroxyvitamin D2 [21343-40-8] and 25-hydroxyvitamin D3 [19356-17-3] were sepd. by further reverse-phase high-pressure liq. chromatog. prior to competitive protein binding assay. The limits of detection were 4.3 pmol/L for the 1,25-dihydroxy metabolites and 1.25 nmol/L for both 25-hydroxyvitamin D2 and 25-hydroxyvitamin D3. 25-Hydroxyvitamin D2 ranged 2.0-11.3 nmol/L in healthy British adults, and this accounted for 9.0% of the mean total 25-hydroxyvitamin D. I was detected in the serum of only 1 of 13 subjects tested, whereas 1,25-dihydroxyvitamin D3 was present in all ranging 48-163 pmol/L. Both I and 1,25-dihydroxyvitamin

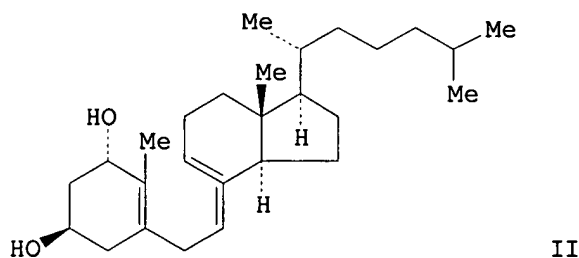
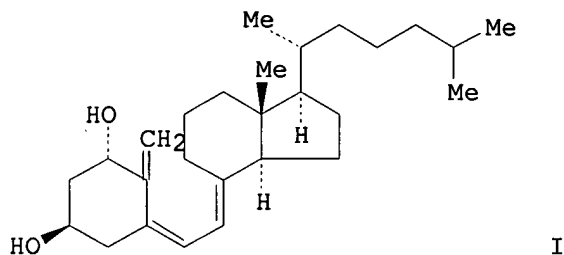
D3 were detected in the serums of hypoparathyroid patients treated with vitamin D2 [50-14-6], but the relation between 25-hydroxyvitamin D and 1,25-dihydroxyvitamin D was complex. When an excess of 25-hydroxyvitamin

D2 was present, the serum concn. of 1,25-dihydroxyvitamin D3 was disproportionately high. Conversely, in patients previously treated with vitamin D2 and receiving only vitamin D3 [67-97-0] at the time of study, the major 25-hydroxy metabolite was in the vitamin D3 form and there was

a

disproportionately high amt. of I. Total 1,25-dihydroxy vitamin D ranged 110-400 pmol/L and was above the upper limit of normal for 1,25-dihydroxyvitamin D3 in half of these hypoparathyroid patients treated with pharmacol. doses of vitamin D.

L23 ANSWER 19 OF 21 HCAPLUS COPYRIGHT 1999 ACS
AN 1982:187362 HCAPLUS
DN 96:187362
TI **HPLC separation of 1.alpha.-hydroxyvitamin D3 from 1.alpha.-hydroxyprevitamin D3**
AU Ruggieri, G.; Ruggeri, P.; Fonseca, G.
CS Ist. Merceol., Univ. Napoli, Napoli, Italy
SO Rass. Chim. (1981), 33(5), 231-5
CODEN: RACHAG; ISSN: 0033-9334
DT Journal
LA Italian
GI



AB 1.alpha.-hydroxyvitamin D3 (I) [41294-56-8] was **sepd.** from its synthetic isomeric precursor 1.alpha.-hydroxyprevitamin D3 (II) [41461-13-6] by high-performance liq. chromatog. (HPLC) on Lichrosorb Si 60, with n-C6H14-iso-PrOH (92:8) as mobile phase and UV detection at 264 nm. When the sepn. was carried out on a simulated pharmaceutical product, the latter was first extd. with CH2Cl2, and the ext. was chromatographed on silica gel [elution with CH2Cl2-MeOH (6:4)] to remove excipients prior to HPLC.

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308-4488

- L23 ANSWER 20 OF 21 HCAPLUS COPYRIGHT 1999 ACS
AN 1980:468757 HCAPLUS
DN 93:68757
TI Sterols, aliphatic and cyclic alcohols. Analysis and occurrence
AU Leerbeck, E.
CS Statens Levnedsmiddelinst., Soborg, Den.
SO Scand. Symp. Lipids, [Proc.], 9th (1977), 107-12. Editor(s): Marcuse, Reinhard. Publisher: Lipidforum, Goeteborg, Swed.
CODEN: 43JSA4
DT Conference
LA English
AB Sterols were extd. from cocoa butter with Et2O after sapon. with boiling alc. KOH, sepd. by the column chromatog. method of J. Eisner, et al. (1972) or the thin-layer chromatog. method of E. Homberg and A. Seher (1977), and quantified by gas chromatog. Cholecalciferol (**vitamin D3**) [67-97-0] was extd. from pork, **purified** by **column chromatog.** on polyethylene glycol-celite, and sepd. by 2 successive **silica gel** thin-layer chromatog. procedures. The detn. of sterols in cocoa butter is carried out to detect adulteration, and the vitamin D3 content of pork is an indication of the metab. of the vitamin after its injection into swine before slaughter.
- L23 ANSWER 21 OF 21 HCAPLUS COPYRIGHT 1999 ACS
AN 1979:192598 HCAPLUS
DN 90:192598
TI HPLC examination of vitamin A and D products
AU Macleod, I. W.; Wiggins, R. A.
CS Lab. Gov. Chem., London, Engl.
SO Proc. Anal. Div. Chem. Soc. (1978), 15(12), 329-32
CODEN: PADSDZ; ISSN: 0306-1396
DT Journal
LA English
AB Vitamin D [1406-16-2] was sepd. from vitamin A [11103-57-4] by a high-performance liq. chromatog. (HPLC) system using a 5-.mu. **silica** column with amyl alc. (0.375%) in hexane as the mobile phase. Vitamin D2 [50-14-6] was **sepd.** from **vitamin D3** [67-97-0] in animal feeds by HPLC on a 5-.mu. reversed-phase packing with MeOH/water as mobile phase. Exts. of samples were prepd. by solvent extn. or sapon.

=> D HIS

(FILE 'HCAPLUS' ENTERED AT 08:33:24 ON 07 AUG 1999)
DEL HIS Y

FILE 'REGISTRY' ENTERED AT 08:36:53 ON 07 AUG 1999
E VITAMIN D3/CN

L1 31 S VITAMIN D3?/CN

FILE 'HCAPLUS' ENTERED AT 08:37:29 ON 07 AUG 1999

L2 7851 S L1 OR VITAMIN D3
L3 57 S VITAMIN D 3
L4 12623 S ?VITAMIN(W) (D 3 OR D3)
L5 13348 S L2-L4
L6 493 S L5 AND CHROMATOGR?
L7 230 S L5 AND (COL OR COLUMN) (2A) (CHROMAT?)
L8 594 S L5 AND (LIQ OR LIQUID) (2A) (CHROMAT?)
L9 494 S L5 AND HPLC
L10 662 S L7-L8
L11 476 S L10 AND (PRODUC? OR PURIF? OR ISOLN OR ISOLAT? OR SEPARAT?
OR

FILE 'REGISTRY' ENTERED AT 08:41:35 ON 07 AUG 1999
L12 1101 S CARBON DIOXIDE?/CN

FILE 'HCAPLUS' ENTERED AT 08:41:43 ON 07 AUG 1999

L13 2 S L11 AND (CO2 OR CARBON DIOXIDE OR L12)
L14 2 S L10 AND (CO2 OR CARBON DIOXIDE OR L12)
L15 79 S L11 AND (SILICA GEL OR SIO2 OR SILICA)
L16 2 S L15 AND IRRADIAT?
L17 1419 S (L3-L5) (9A) (PRODUC? OR PURIF? OR ISOLN OR ISOLAT? OR
SEPARAT
L18 213 S L10 AND L17
L19 15 S L17(9A) (COL OR COLUMN) (2A) (CHROMAT?)
L20 54 S L17(9A) ((LIQ OR LIQUID) (2A) (CHROMAT?))
L21 40 S L17(9A) HPLC
L22 96 S L19-L21
L23 21 S L22 AND (SILICA GEL OR SIO2 OR SILICA)
L24 0 S L23 AND IRRADIAT?

FILE 'LIFESCI, SCISEARCH, WPIDS, JICST-EPLUS' ENTERED AT 08:50:09 ON 07
AUG 1999

L25 5555 S (VITAMIN OR PREVITAMIN) (W) (D3 OR D 3)
L26 329 S L25(9A) (PRODUC? OR PURIF? OR ISOLN OR ISOLAT? OR SEPARAT?
OR
L27 3 S L26(9A) (COL OR COLUMN) (2A) (CHROMAT?)
L28 14 S L26(9A) (LIQ OR LIQUID) (2A) (CHROMAT?)
L29 4 S L26(9A) HPLC
L30 222 S L25 AND ((COL OR COLUMN OR LIQ OR LIQUID) (2A) (CHROMAT?) OR
HP
L31 0 S L30 AND (CO2 OR CARBON DIOXIDE)
L32 19 S L27-L29
L33 19 DUP REMOV L32 (0 DUPLICATES REMOVED)

=> D 1-19 BIB ABS

L33 ANSWER 1 OF 19 SCISEARCH COPYRIGHT 1999 ISI (R)
AN 1999:181993 SCISEARCH
GA The Genuine Article (R) Number: 170VL
TI High-performance liquid chromatographic
separation of vitamin D-3 3-fatty
acid esters and their liquid chromatography mass
spectrometry
AU Mitamura K (Reprint); Nambu Y; Tanaka M; Kawanishi A; Kitahori J; Shimada
K
CS KANAZAWA UNIV, FAC PHARMACEUT SCI, 13-1 TAKARA MACHI, KANAZAWA, ISHIKAWA
920093, JAPAN (Reprint)
CYA JAPAN
SO JOURNAL OF LIQUID CHROMATOGRAPHY & RELATED TECHNOLOGIES, (22 FEB 1999)
Vol. 22, No. 3, pp. 367-377.
Publisher: MARCEL DEKKER INC, 270 MADISON AVE, NEW YORK, NY 10016.
ISSN: 1082-6076.
DT Article; Journal
FS PHYS; LIFE
LA English
REC Reference Count: 16
ABSTRACT IS AVAILABLE IN THE ALL AND IALL FORMATS
AB The separation of authentic vitamin D-3 3-stearate, -palmitate,
oleate,
and -linoleate, possible metabolites of vitamin D3, was carried out using
reversed-phase high performance liquid chromatography. Liquid
chromatography/atmospheric pressure chemical ionization - mass
spectrometry (LC/APCI-MS) of these esters was also examined, and a
deesterified peak was detected as a base peak. On the contrary, the fatty
acid ester derivatized with a Cookson-type reagent, 4-phenyl-1,2,4-
triazoline-3,5-dione, showed a quasi-molecular ion as an intense peak.
The
LC/APCI-MS data on the adducts of another Cookson-type reagent having an
electron-capture substituent were also reported.

L33 ANSWER 2 OF 19 SCISEARCH COPYRIGHT 1999 ISI (R)
AN 96:770808 SCISEARCH
GA The Genuine Article (R) Number: VM384
TI THE EFFECT OF SEASON AND LATITUDE ON IN-VITRO VITAMIN-D FORMATION BY
SUNLIGHT IN SOUTH-AFRICA
AU PETTIFOR J M (Reprint); MOODLEY G P; HOUGH F S; KOCH H; CHEN T; LU Z;
HOLICK M F
CS UNIV WITWATERSRAND, DEPT PAEDIAT, MRC, UNIV MIN METABOL RES UNIT,
JOHANNESBURG, SOUTH AFRICA (Reprint); UNIV STELLENBOSCH, DIV ENDOCRINOL,
DEPT MED, ZA-7505 TYGERBERG, W CAPE W C, SOUTH AFRICA; BOSTON
UNIV, SCH MED, VITAMIN D SKIN & BONE RES LAB, BOSTON, MA, 02118
CYA SOUTH AFRICA; USA
SO SOUTH AFRICAN MEDICAL JOURNAL, (OCT 1996) Vol. 86, No. 10, pp.
1270-1272.
ISSN: 0038-2469.
DT Article; Journal
FS CLIN
LA ENGLISH
REC Reference Count: 19
ABSTRACT IS AVAILABLE IN THE ALL AND IALL FORMATS

Searched by John Dantzman 308-4488

AB Aims. To assess the effect of season and latitude on the in vitro formation of previtamin D-3 and vitamin D-3 from 7-dehydrocholesterol (7-DHC) by sunlight in two cities in South Africa, Cape Town and Johannesburg.

Methods. An in vitro study utilising vials containing 7-DHC, which were exposed to sunlight for a period of 1 hour between 8:00 and 17:00 on 1 day

a month for a year. **Previtamin D-3** and **vitamin D-3** were **separated** from 7-DHC by high-performance liquid chromatography, and the amounts formed were calculated with the use of external standards.

Results. A marked seasonal variation in vitamin D-3 production was noted in Cape Town, with very little being formed during the winter months

of April through September. In Johannesburg, in vitro formation changed little throughout the year, and was similar to that found in Cape Town during the summer, During sunlit hours, vitamin D-3 production was

maximal at midday and small quantities were still being formed between 8:00 and 9:00, and between 16:00 and 17:00 during the summer, During winter in

Cape Town, peak formation at midday was less than one-third of that in Johannesburg, and negligible amounts were formed before 10:00 and after 15:00.

Conclusions. The previously documented seasonal variation in serum 25-hydroxyvitamin D recorded in patients in Johannesburg is probably a consequence of the increased clothing worn and the decreased time spent out of doors during winter, rather than decreased ultraviolet radiation reaching the earth. The limited in vitro formation of vitamin D-3 during winter in Cape Town may have clinical implications insofar as the management of metabolic bone diseases like rickets and osteoporosis is concerned, Breast-fed infants resident in the area are likely to suffer from vitamin D deficiency rickets unless vitamin D supplements are provided, or the mothers are encouraged to take their children out of doors.

L33 ANSWER 3 OF 19 SCISEARCH COPYRIGHT 1999 ISI (R)

AN 96:441188 SCISEARCH

GA The Genuine Article (R) Number: UP398

TI VITAMIN-D-3 AND ITS METABOLITES IN THE TOMATO PLANT

AU PREMA T P; RAGHURAMULU N (Reprint)

CS NATL INST NUTR, DEPT ENDOCRINOL & METAB, JAMAI OSMANIA PO, HYDERABAD @ , ANDHRA PRADESH, INDIA (Reprint); NATL INST NUTR, DEPT ENDOCRINOL & METAB, HYDERABAD @ , ANDHRA PRADESH, INDIA

CYA INDIA

SO PHYTOCHEMISTRY, (JUN 1996) Vol. 42, No. 3, pp. 617-620.

ISSN: 0031-9422.

DT Article; Journal

FS LIFE; AGRI

LA ENGLISH

REC Reference Count: 28

ABSTRACT IS AVAILABLE IN THE ALL AND IALL FORMATS

AB The tomato plant has been demonstrated to have vitamin D-like activity.

The activity was present in the leaves but not in the fruit of the plant.

The chloroform extract of the leaves (containing free vitamin D and its

Searched by John Dantzman 308-4488

metabolites) and the ethanol extract of the residue (containing the glycosidic forms) were partially **purified by column chromatography**. The fractions corresponding to authentic **vitamin D-3**, 25-hydroxy vitamin D-3 and 1,25-dihydroxy vitamin D-3 were tested for biological activity and analysed by HPLC. The results indicate that the plant contains vitamin D-3, 25-hydroxy vitamin D-3 and 1,25-dihydroxy vitamin D-3 and their glycosidic forms. Free vitamin D-3 was observed to be the major active principle and the concentration of the free forms of the metabolites was higher than the corresponding glycosides.

- L33 ANSWER 4 OF 19 SCISEARCH COPYRIGHT 1999 ISI (R)
AN 94:723483 SCISEARCH
GA The Genuine Article (R) Number: PQ585
TI FREE VITAMIN-D-3 METABOLITES IN CESTRUM-DIURNUM LEAVES
AU PREMA T P; RAGHURAMULU N (Reprint)
CS NATL INST NUTR, DEPT ENDOCRINOL & METAB, HYDERABAD 500007, ANDHRA PRADESH,
INDIA (Reprint); NATL INST NUTR, DEPT ENDOCRINOL & METAB, HYDERABAD 500007, ANDHRA PRADESH, INDIA
CYA INDIA
SO PHYTOCHEMISTRY, (OCT 1994) Vol. 37, No. 3, pp. 677-681.
ISSN: 0031-9422.
DT Article; Journal
FS LIFE; AGRI
LA ENGLISH
REC Reference Count: 26
ABSTRACT IS AVAILABLE IN THE ALL AND IALL FORMATS
AB The occurrence of free and glycosidic vitamin D-3 and its metabolites in Cestrum diurnum leaves was investigated. The chloroform extract of the leaves (containing free vitamin D-3 and its metabolites) and the chloroform-methanol (1:2) extract (containing glycosidic vitamin D-3 and its metabolites) of the residue after glycosidase treatment were partially **purified by column chromatography**. Fractions corresponding to authentic **vitamin D-3**, 25-hydroxy vitamin D-3 (25-OH-D-3) and 1,25-dihydroxy vitamin D-3 (1,25-(OH)(2)D-3) were found to be biologically active. These fractions were also analysed and quantified by HPLC. This is the first demonstration of the presence of free vitamin D-3, 25-OH-D-3 and 1,25-(OH)(2)D-3 in a calcinogenic plant. Apart from the free forms, the corresponding glycosidic metabolites were also found. The concentration of free metabolites was much higher than that of the glycosidic forms.
- L33 ANSWER 5 OF 19 SCISEARCH COPYRIGHT 1999 ISI (R)
AN 92:472896 SCISEARCH
GA The Genuine Article (R) Number: JG391
TI VITAMIN-D DETERMINATION USING HIGH-PERFORMANCE LIQUID-CHROMATOGRAPHY WITH INTERNAL STANDARD REDOX MODE ELECTROCHEMICAL DETECTION AND ITS APPLICATION
TO MEDICAL NUTRITIONAL PRODUCTS
AU HASEGAWA H (Reprint)
CS MEIJI MILK PROD CO LTD, CENT RES INST, DEPT MED NUTR PROD, HIGASHIMURAYAMA, TOKYO 189, JAPAN (Reprint)
CYA JAPAN
SO JOURNAL OF CHROMATOGRAPHY, (17 JUL 1992) Vol. 605, No. 2, pp. 215-220.
Searched by John Dantzman 308-4488

ISSN: 0021-9673.
DT Article; Journal
FS PHYS; LIFE
LA ENGLISH
REC Reference Count: 33
ABSTRACT IS AVAILABLE IN THE ALL AND IALL FORMATS
AB The selectivity and sensitivity of high-performance liquid chromatographic analysis for the determination of vitamin D3 and D2 content in medical nutritional products were improved with the aid of electrochemical detection in internal standard-oxidation/reduction mode. The relative standard deviation at the 13-nmol level for the analysis of vitamin D in products was 3.6% (n = 5). Recovery rates of added vitamin D3 were 97.5 +/- 3.0% (mean +/- S.D.). It is concluded that this method is much more selective and accurate for detection of vitamin D at the nanomolar level than ultraviolet detection methods.

L33 ANSWER 6 OF 19 SCISEARCH COPYRIGHT 1999 ISI (R)
AN 90:260515 SCISEARCH
GA The Genuine Article (R) Number: DC674
TI EXTRACTION AND CHROMATOGRAPHIC-SEPARATION OF 1,25-(OH)2-VITAMIN-D3 FROM SERUM OR PLASMA WITHOUT HIGH-PERFORMANCE LIQUID-CHROMATOGRAPHY (HPLC)
AU ARMBRUSTER F P (Reprint); TAMPE J; MULLER K B; WIESE P; REICHEL H; SCHMIDTGAYK H
CS IMMUNDIAGNOST GMBH, WILHELMSTR 7, W-6140 BENSHEIM, GERMANY (Reprint)
CYA GERMANY
SO ARZTLICHE LABORATORIUM, (1990) Vol. 36, No. 4, pp. 75-80.
DT Article; Journal
FS CLIN
LA German
REC No References Keyed

L33 ANSWER 7 OF 19 SCISEARCH COPYRIGHT 1999 ISI (R)
AN 89:606063 SCISEARCH
GA The Genuine Article (R) Number: CA747
TI DETERMINATION OF VITAMIN-D3 IN MARGARINES, OILS AND OTHER SUPPLEMENTED FOOD-PRODUCTS USING HPLC
AU JOHNSSON H (Reprint); HALEN B; HESSEL H; NYMAN A; THORZELL K
CS SWEDISH NATL FOOD ADM, BOX 622, S-75126 UPPSALA, SWEDEN (Reprint)
CYA SWEDEN
SO INTERNATIONAL JOURNAL FOR VITAMIN AND NUTRITION RESEARCH, (1989) Vol. 59, No. 3, pp. 262-268.
DT Article; Journal
FS LIFE; AGRI
LA ENGLISH
REC Reference Count: 13

L33 ANSWER 8 OF 19 SCISEARCH COPYRIGHT 1999 ISI (R)
AN 85:191674 SCISEARCH
GA The Genuine Article (R) Number: AEP01
TI COMPARISON OF HPLC SEPARATION OF VITAMIN-D3 METABOLITES AND THEIR ISOTACHYSTEROL-3 DERIVATIVES
AU KOSKINEN T (Reprint); VALTONEN P
CS UNIV TAMPERE, DEPT CLIN SCI, TEISKONTIE 35, SF-33520 TAMPERE, FINLAND (Reprint)

CYA FINLAND
SO JOURNAL OF LIQUID CHROMATOGRAPHY, (1985) Vol. 8, No. 3, pp. 463-472.
DT Article; Journal
FS PHYS; LIFE
LA ENGLISH
REC Reference Count: 9

L33 ANSWER 9 OF 19 SCISEARCH COPYRIGHT 1999 ISI (R)
AN 82:456759 SCISEARCH
GA The Genuine Article (R) Number: PH350
TI HIGH-PERFORMANCE **LIQUID-CHROMATOGRAPHY** OF FAT-SOLUBLE
VITAMINS - **SEPARATION** AND IDENTIFICATION OF VITAMIN-D2 AND
VITAMIN-D3 AND THEIR ISOMERS IN FOOD SAMPLES IN THE
PRESENCE OF VITAMIN-A, VITAMIN-E AND CAROTENE
AU ZONTA F (Reprint); STANCHER B; BIELAWNY J
CS UNIV TRIESTE, IST MERCEOL, I-34127 TRIESTE, ITALY (Reprint); AKAD EKON
POZNAN, INST TOWAROZNAWSTWA, PL-60967 POZNAN, POLAND
CYA ITALY; POLAND
SO JOURNAL OF CHROMATOGRAPHY, (1982) Vol. 246, No. 1, pp. 105-112.
DT Article; Journal
FS PHYS; LIFE
LA ENGLISH
REC Reference Count: 27

L33 ANSWER 10 OF 19 SCISEARCH COPYRIGHT 1999 ISI (R)
AN 80:177090 SCISEARCH
GA The Genuine Article (R) Number: JN854
TI BIOLOGICAL GENERATION OF TRITIATED **VITAMIN-D3**
METABOLITES AND THEIR **PURIFICATION** BY HIGH-PERFORMANCE
LIQUID-CHROMATOGRAPHY
AU CLEMENS T L (Reprint); FRAHER L J; ORIORDAN J L H; LITTLE C J; DALE A
CS MIDDLESEX HOSP, DEPT MED, LONDON W1, ENGLAND (Reprint); ROCHE PROD LTD,
DEPT PHYS METHOD, WELWYN GARDEN CITY, HERTFORDSHIRE, ENGLAND
CYA ENGLAND
SO CHROMATOGRAPHIA, (1980) Vol. 13, No. 3, pp. 141-144.
DT Article; Journal
FS PHYS
LA ENGLISH
REC Reference Count: 14

L33 ANSWER 11 OF 19 SCISEARCH COPYRIGHT 1999 ISI (R)
AN 79:87076 SCISEARCH
GA The Genuine Article (R) Number: GK837
TI NATURALLY OCCURRING **VITAMIN-D3** IN FISH
PRODUCTS ANALYZED BY HIGH-PERFORMANCE **LIQUID-**
CHROMATOGRAPHY USING VITAMIN-D2 AS AN INTERNAL STANDARD
AU EGAAS E (Reprint); LAMBERTSEN G
CS DIRECTORATE FISHERIES, BERGEN, NORWAY
CYA NORWAY
SO JOURNAL OF THE AMERICAN OIL CHEMISTS SOCIETY, (1979) Vol. 56, No. 2, pp.
A188.
DT Conference; Journal
FS PHYS; LIFE; AGRI
LA ENGLISH
REC No References

L33 ANSWER 12 OF 19 SCISEARCH COPYRIGHT 1999 ISI (R)
Searched by John Dantzman 308-4488

AN 79:203460 SCISEARCH
GA The Genuine Article (R) Number: GU287
TI NATURALLY OCCURRING **VITAMIN-D3** IN FISH
PRODUCTS ANALYZED BY **HPLC**, USING VITAMIN-D2 AS AN
INTERNATIONAL STANDARD
AU EGAAS E (Reprint); LAMBERTSEN G
CS DIRECTORATE FISHERIES, INST VITAMIN RES, POB 187, N-5001 BERGEN, NORWAY
(Reprint)
CYA NORWAY
SO INTERNATIONAL JOURNAL FOR VITAMIN AND NUTRITION RESEARCH, (1979) Vol. 49,
No. 1, pp. 35-42.
DT Article; Journal
FS LIFE; AGRI
LA ENGLISH
REC Reference Count: 12

L33 ANSWER 13 OF 19 SCISEARCH COPYRIGHT 1999 ISI (R)
AN 77:390003 SCISEARCH
GA The Genuine Article (R) Number: DV678
TI HIGH-PRESSURE **LIQUID-CHROMATOGRAPHIC**
SEPARATION AND IDENTIFICATION OF VITAMIN-D2 AND **VITAMIN-**
D3 IN PRESENCE OF FAT-SOLUBLE VITAMINS IN DOSAGE FORMS
AU OSADCA M (Reprint); ARAUJO M
CS HOFFMANN LA ROCHE INC, DEPT DEV, FOOD & AGR PROD, NUTLEY, NJ, 07110
CYA USA
SO JOURNAL OF THE ASSOCIATION OF OFFICIAL ANALYTICAL CHEMISTS, (1977) Vol.
60, No. 5, pp. 993-997.
DT Article; Journal
LA ENGLISH
REC Reference Count: 28

L33 ANSWER 14 OF 19 SCISEARCH COPYRIGHT 1999 ISI (R)
AN 77:468562 SCISEARCH
GA The Genuine Article (R) Number: EB820
TI **SEPARATION** OF VITAMIN-D2 AND **VITAMIN-D3** BY
HIGH-PRESSURE **LIQUID-CHROMATOGRAPHY**
AU WIGGINS R A (Reprint)
CS LAB GOVT CHEM, DEPT IND, LONDON SE1 9NQ, ENGLAND
CYA ENGLAND
SO CHEMISTRY & INDUSTRY, (1977) Vol. 1977, No. 20, pp. 841-842.
DT Letter; Journal
FS ENGI
LA ENGLISH
REC Reference Count: 5

L33 ANSWER 15 OF 19 SCISEARCH COPYRIGHT 1999 ISI (R)
AN 76:186562 SCISEARCH
GA The Genuine Article (R) Number: BR689
TI **SEPARATION** OF **VITAMIN-D-3**
METABOLITES AND THEIR ANALOGS BY HIGH-PRESSURE **LIQUID-**
CHROMATOGRAPHY
AU IKEKAWA N (Reprint); KOIZUMI N
CS TOKYO INST TECHNOL, CHEM NAT PROD CHEM, MEGURO KU, TOKYO, JAPAN; TOKYO
INST TECHNOL, CHEM NAT PROD CHEM, MEGURO KU, TOKYO, JAPAN
CYA JAPAN
SO JOURNAL OF CHROMATOGRAPHY, (1976) Vol. 119, pp. 227-232.
DT Article; Journal

Searched by John Dantzman 308-4488

LA ENGLISH

REC Reference Count: 18

L33 ANSWER 16 OF 19 SCISEARCH COPYRIGHT 1999 ISI (R)

AN 75:381385 SCISEARCH

GA The Genuine Article (R) Number: AX154

TI HIGH-PRESSURE **LIQUID-CHROMATOGRAPHY** -
SEPARATION OF METABOLITES OF VITAMIN-D2 AND VITAMIN-D3 ON SMALL-PARTICLE SILICA COLUMNS

AU JONES G (Reprint); DELUCA H F

SO JOURNAL OF LIPID RESEARCH, (1975) Vol. 16, No. 6, pp. 448-453.

DT Article; Journal

FS LIFE

LA ENGLISH

REC Reference Count: 23

L33 ANSWER 17 OF 19 SCISEARCH COPYRIGHT 1999 ISI (R)

AN 74:400580 SCISEARCH

GA The Genuine Article (R) Number: U8213

TI **SEPARATION OF HYDROXYLATED DERIVATIVES OF VITAMIN-D3 BY HIGH SPEED LIQUID-CHROMATOGRAPHY (HSLC)**

AU MATTHEWS E W (Reprint); BYFIELD P G H; COLSTON K W; EVANS I M A; GALANTE L

S; MACINTYR.I

CS ROY POSTGRAD MED SCH, ENDOCRINE UNIT, DUCANE RD, LONDON W12 OHS, ENGLAND
CYA ENGLAND

SO FEBS LETTERS, (1974) Vol. 48, No. 1, pp. 122-125.

DT Article; Journal

LA ENGLISH

REC Reference Count: 3

L33 ANSWER 18 OF 19 JICST-EPlus COPYRIGHT 1999 JST

AN 920143447 JICST-EPlus

TI **Separation of Vitamin D3 Derivatives by
Reversed Phase High Performance Liquid Chromatography.**

AU HONMA KEIKO; MAWATARI KAZUHIRO; SUGITANI KAYO; TANISHIMA KIYOO; YAMAGISHI TAKAYOSHI

CS Kanazawa Univ., College of Medical Technology

SO Kanazawa Daigaku Iryo Gijutsu Tanki Daigakubu Kiyo (Memoirs of the School of Allied Medical Professions, Kanazawa University), (1991) vol. 15, pp. 57-60. Journal Code: Y0841A (Fig. 4, Ref. 7)

ISSN: 0386-7072

CY Japan

DT Journal; Article

LA Japanese

STA New

L33 ANSWER 19 OF 19 JICST-EPlus COPYRIGHT 1999 JST

AN 910176451 JICST-EPlus

TI **Separation of vitamin D3 derivatives by high
performance liquid chromatography.**

AU HONMA KEIKO; SUGITANI KAYO; MAWATARI KAZUHIRO; TANISHIMA KIYOO; YAMAGISHI TAKAYOSHI

CS Kanazawa Univ., College of Medical Technology

SO Kanazawa Daigaku Iryo Gijutsu Tanki Daigakubu Kiyo (Memoirs of the School of Allied Medical Professions, Kanazawa University), (1990) vol. 14, pp. 91-95. Journal Code: Y0841A (Fig. 5, Tbl. 1, Ref. 5)

Searched by John Dantzman 308-4488

QAZI

09/335022

Page 8

ISSN: 0386-7072
CY Japan
DT Journal; Article
LA Japanese
STA New

Searched by John Dantzman

308-4488

=> d his

(FILE 'HOME' ENTERED AT 08:32:22 ON 07 AUG 1999)

FILE 'HCAPLUS' ENTERED AT 08:32:39 ON 07 AUG 1999

L1 30 S JOHANNSEN M?/AU
L2 0 S L1 AND VITAMIN D
L3 1 S L1 AND VITAMIN D2
L4 1 S L1 AND VITAMIN D3
L5 1 S L2-L4
SELECT RN L5 1

FILE 'REGISTRY' ENTERED AT 08:33:18 ON 07 AUG 1999

L6 9 S E1-9

FILE 'HCAPLUS' ENTERED AT 08:33:24 ON 07 AUG 1999

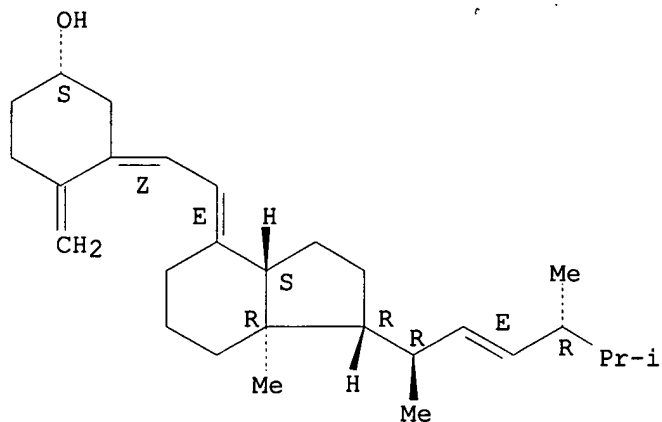
L7 1 S L5 AND L6

Inventor Search

=> d bib abs hitstr

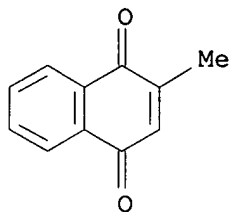
L7 ANSWER 1 OF 1 HCAPLUS COPYRIGHT 1999 ACS
AN 1997:44341 HCAPLUS
DN 126:51588
TI Solubilities of the Fat-Soluble Vitamins A, D, E, and K in Supercritical Carbon Dioxide
AU **Johannsen, Monika**; Brunner, Gerd
CS Arbeitsbereich Verfahrenstechnik II, Technical University, Hamburg, D-21073, Germany
SO J. Chem. Eng. Data (1997), 42(1), 106-111
CODEN: JCEAAX; ISSN: 0021-9568
PB American Chemical Society
DT Journal
LA English
AB Solubilities of eight different species of the fat-sol. vitamins A, D, E, and K in supercrit. carbon dioxide were measured at (313, 333, and 353) K and over a pressure range of 20 MPa to 35 MPa. Solubilities have been detd. by an anal. method using the direct coupling of an equil. cell to a supercrit. fluid chromatog. system with UV detection. The solubilities
of all fat-sol. vitamins in supercrit. carbon dioxide under the conditions investigated are in the range of 10 g/kg, except for .beta.-carotene (provitamin A), which is 3 orders of magnitude less sol. With increasing mol. mass of the vitamin, its soly. in supercrit. carbon dioxide decreases. At const. temp., the soly. of all substances increases with increasing d. At const. d., a rise of temp. results in an increase in soly. This is caused by the increasing vapor pressure of the solid.
IT 50-14-6, Vitamin D2 58-27-5, Vitamin K3 67-97-0, Vitamin D3 68-26-8, trans-Retinol 119-13-1, .delta.-Tocopherol 124-38-9, Carbon dioxide, properties 7235-40-7, .beta., .beta.-Carotene 10191-41-0, DL-.alpha.-Tocopherol 11104-38-4, Vitamin K1
RL: PRP (Properties)
(solubilities of fat-sol. vitamins A, D, E, and K in supercrit. carbon dioxide)
RN 50-14-6 HCAPLUS
CN 9,10-Secoergosta-5,7,10(19),22-tetraen-3-ol, (3.beta.,5Z,7E,22E)- (9CI)
(CA INDEX NAME)

Absolute stereochemistry. Rotation (+).
Double bond geometry as shown.



RN 58-27-5 HCAPLUS

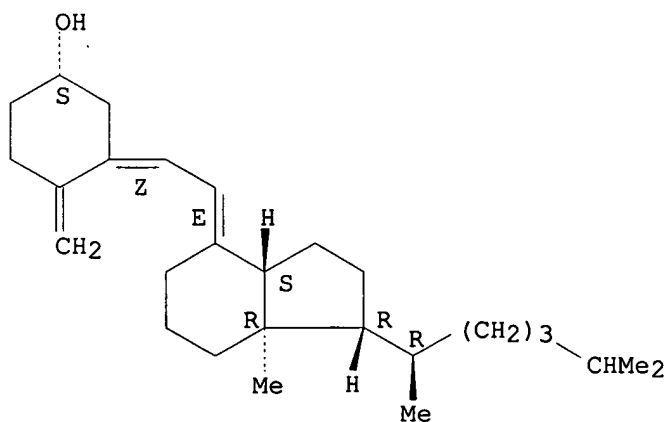
CN 1,4-Naphthalenedione, 2-methyl- (9CI) (CA INDEX NAME)



RN 67-97-0 HCAPLUS

CN 9,10-Secosteroid-5,7,10(19)-trien-3-ol, (3.β.,5Z,7E)- (9CI) (CA INDEX NAME)

Absolute stereochemistry.
Double bond geometry as shown.

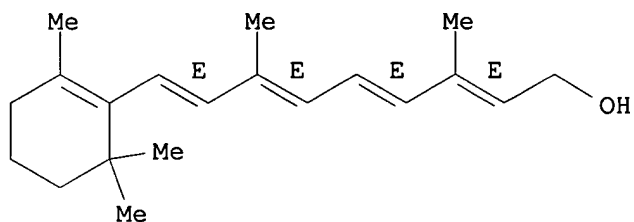


Searched by John Dantzman

308-4488

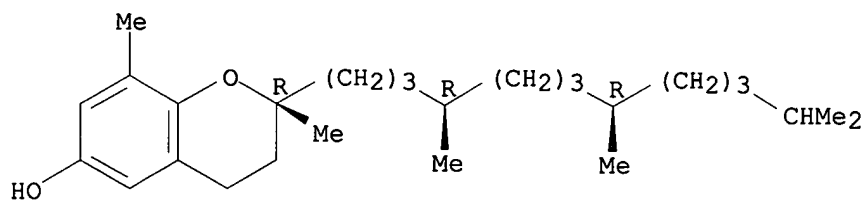
RN 68-26-8 HCAPLUS
CN Retinol (9CI) (CA INDEX NAME)

Double bond geometry as shown.

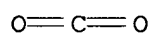


RN 119-13-1 HCAPLUS
CN 2H-1-Benzopyran-6-ol, 3,4-dihydro-2,8-dimethyl-2-[(4R,8R)-4,8,12-trimethyltridecyl]-, (2R)- (9CI) (CA INDEX NAME)

Absolute stereochemistry.

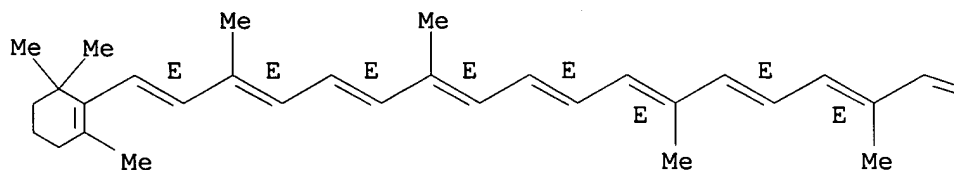


RN 124-38-9 HCAPLUS
CN Carbon dioxide (8CI, 9CI) (CA INDEX NAME)



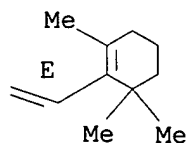
RN 7235-40-7 HCAPLUS
CN .beta.,.beta.-Carotene (9CI) (CA INDEX NAME)

Double bond geometry as shown.



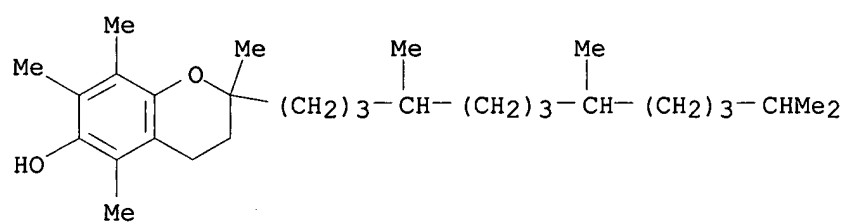
PAGE 1-A

PAGE 1-B



RN 10191-41-0 HCAPLUS

CN 2H-1-Benzopyran-6-ol, 3,4-dihydro-2,5,7,8-tetramethyl-2-(4,8,12-trimethyltridecyl)- (9CI) (CA INDEX NAME)



RN 11104-38-4 HCAPLUS

CN Vitamin K1 (9CI) (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

=> D HIS

(FILE 'HCAPLUS' ENTERED AT 08:33:24 ON 07 AUG 1999)
DEL HIS Y

FILE 'REGISTRY' ENTERED AT 08:36:53 ON 07 AUG 1999
E VITAMIN D3/CN
L1 31 S VITAMIN D3?/CN

FILE 'HCAPLUS' ENTERED AT 08:37:29 ON 07 AUG 1999
L2 7851 S L1 OR VITAMIN D3
L3 57 S VITAMIN D 3
L4 12623 S ?VITAMIN(W) (D 3 OR D3)
L5 13348 S L2-L4
L6 493 S L5 AND CHROMATOGR?
L7 230 S L5 AND (COL OR COLUMN) (2A) (CHROMAT?)
L8 594 S L5 AND (LIQ OR LIQUID) (2A) (CHROMAT?)
L9 494 S L5 AND HPLC
L10 662 S L7-L8
L11 476 S L10 AND (PRODUC? OR PURIF? OR ISOLN OR ISOLAT? OR SEPARAT?
OR

FILE 'REGISTRY' ENTERED AT 08:41:35 ON 07 AUG 1999
L12 1101 S CARBON DIOXIDE?/CN

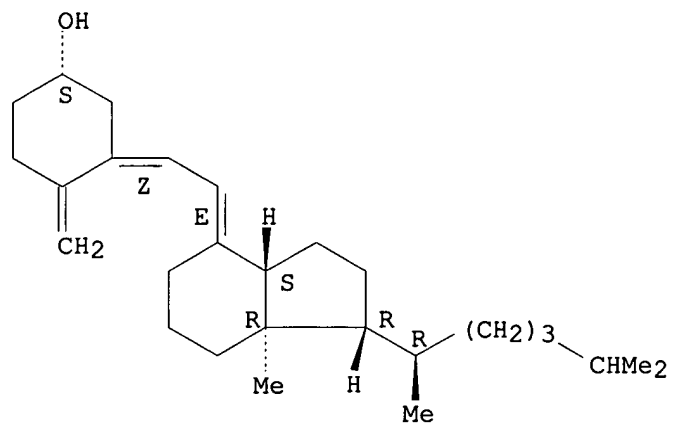
FILE 'HCAPLUS' ENTERED AT 08:41:43 ON 07 AUG 1999
L13 2 S L11 AND (CO2 OR CARBON DIOXIDE OR L12) *> Same 2 ites*
L14 2 S L10 AND (CO2 OR CARBON DIOXIDE OR L12)
L15 79 S L11 AND (SILICA GEL OR SIO2 OR SILICA)
L16 2 S L15 AND IRRADIAT?
L17 1419 S (L3-L5) (9A) (PRODUC? OR PURIF? OR ISOLN OR ISOLAT? OR
SEPARAT
L18 213 S L10 AND L17
L19 15 S L17(9A) (COL OR COLUMN) (2A) (CHROMAT?)
L20 54 S L17(9A) ((LIQ OR LIQUID) (2A) (CHROMAT?))
L21 40 S L17(9A)HPLC
L22 96 S L19-L21
L23 21 S L22 AND (SILICA GEL OR SIO2 OR SILICA)
L24 0 S L23 AND IRRADIAT?

FILE 'LIFESCI, SCISEARCH, WPIDS, JICST-EPLUS' ENTERED AT 08:50:09 ON 07
AUG 1999
L25 5555 S (VITAMIN OR PREVITAMIN) (W) (D3 OR D 3)
L26 329 S L25(9A) (PRODUC? OR PURIF? OR ISOLN OR ISOLAT? OR SEPARAT?
OR
L27 3 S L26(9A) (COL OR COLUMN) (2A) (CHROMAT?)
L28 14 S L26(9A) (LIQ OR LIQUID) (2A) (CHROMAT?)
L29 4 S L26(9A)HPLC
L30 222 S L25 AND ((COL OR COLUMN OR LIQ OR LIQUID) (2A) (CHROMAT?) OR
HP
L31 0 S L30 AND (CO2 OR CARBON DIOXIDE)
L32 19 S L27-L29
L33 19 DUP REMOV L32 (0 DUPLICATES REMOVED)

=> D BIB ABS HITSTR

L13 ANSWER 1 OF 2 HCAPLUS COPYRIGHT 1999 ACS
AN 1996:500657 HCAPLUS
DN 125:230937
TI Packed capillary **column** supercritical fluid
chromatography of fat-soluble vitamins using liquid crystal
polysiloxane coated particles
AU Shen, Y.; Bradshaw, J. S.; Lee, M. L.
CS Dep. Chem., Brigham Young Univ., Provo, UT, 84602, USA
SO Chromatographia (1996), 43(1/2), 53-58
CODEN: CHRGB7; ISSN: 0009-5893
DT Journal
LA English
AB Liq. crystal polysiloxane stationary phases were prepd. by coating two
different polymers on deactivated porous silica particles (10 .mu.m
diam.,
80 .ANG. pores). Deactivation of the silica particles before coating was
necessary to prep. highly efficient and inert stationary phases for
supercrit. fluid chromatog. (SFC). Fat-sol. vitamins E, A, K1, K2, D2,
and D3 were **sepd.** on these columns using neat supercrit.
CO2 as mobile phase. The analyses were completed within 40 min at
70.degree.. The results were compared to those obtained using a
capillary
column packed with less ordered liq. crystal
m,m-cyanobiphenyl-substituted
polysiloxane coated particles. Reduced shape selectivity was obsd. with
this cyanobiphenyl phase. The response factors of vitamins A, E, K1, K2,
D2, and D3 when using the flame ionization detector (FID) were detd. to
be
very similar.
IT 67-97-0, Vitamin d3
RL: ANT (Analyte); ANST (Analytical study)
(packed capillary **column** supercrit. fluid **chromatog**
. of fat-sol. vitamins using liq. crystal polysiloxane coated
particles)
RN 67-97-0 HCAPLUS
CN 9,10-Secocholesta-5,7,10(19)-trien-3-ol, (3.beta.,5Z,7E)- (9CI) (CA
INDEX
NAME)

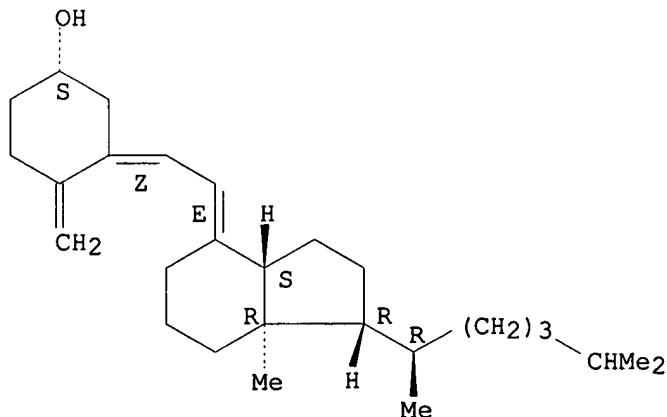
Absolute stereochemistry.
Double bond geometry as shown.



=> D BIB ABS HITSTR 2

L13 ANSWER 2 OF 2 HCAPLUS COPYRIGHT 1999 ACS
AN 1995:956938 HCAPLUS
DN 124:105153
TI Applications of reversed-phase high performance **liquid chromatography** using enhanced-fluidity liquid mobile phases
AU Lee, Stephen T.; Olesik, Susan V.; Fields, Steven M.
CS Department of Chemistry, The Ohio State University, Columbus, OH, 43210, USA
SO J. Microcolumn Sep. (1995), 7(5), 477-83
CODEN: JMSEEJ; ISSN: 1040-7685
DT Journal
LA English
AB Enhanced-fluidity liq. mobile phases (methanol/H₂O/CO₂) were used as eluents in reversed-phase HPLC. The low pressure drop across the column allowed serial connection of micro-scale columns to achieve the efficient **sepn.** of a coal tar sample. Other applications such as the **sepn.** of fat sol. vitamins and probucol and related compds. are shown.
IT 67-97-0, Cholecalciferol
RL: ANT (Analyte); ANST (Analytical study)
(coal tar and vitamins and drugs **sepn.** by reversed-phase high performance **liq. chromatog.** using enhanced-fluidity liq. mobile phases)
RN 67-97-0 HCAPLUS
CN 9,10-Secocholesta-5,7,10(19)-trien-3-ol, (3.beta.,5Z,7E)- (9CI) (CA INDEX NAME)

Absolute stereochemistry.
Double bond geometry as shown.



=> s l1 and vitamin d2
149509 VITAMIN
48840 D2
2388 VITAMIN D2

(VITAMIN(W)D2)

L12 1 L1 AND VITAMIN D2

=> d l12 ibib hitstr abs

L12 ANSWER 1 OF 1 CAPLUS COPYRIGHT 2002 ACS

ACCESSION NUMBER: 1997:44341 CAPLUS

DOCUMENT NUMBER: 126:51588

TITLE: Solubilities of the Fat-Soluble Vitamins A, D, E, and
K in **Supercritical Carbon
Dioxide**

AUTHOR(S): Johannsen, Monika; Brunner, Gerd

CORPORATE SOURCE: Arbeitsbereich Verfahrenstechnik II, Technical
University, Hamburg, D-21073, Germany

SOURCE: Journal of Chemical and Engineering Data (1997),
42(1), 106-111

CODEN: JCEAAX; ISSN: 0021-9568

PUBLISHER: American Chemical Society

DOCUMENT TYPE: Journal

LANGUAGE: English

AB Solubilities of eight different species of the fat-sol. vitamins A, D, E, and K in supercrit. carbon dioxide were measured at (313, 333, and 353) K and over a pressure range of 20 MPa to 35 MPa. Solubilities have been detd. by an anal. method using the direct coupling of an equil. cell to a supercrit. fluid chromatog. system with UV detection. The solubilities of all fat-sol. vitamins in supercrit. carbon dioxide under the conditions investigated are in the range of 10 g/kg, except for .beta.-carotene (provitamin A), which is 3 orders of magnitude less sol. With increasing mol. mass of the vitamin, its soly. in supercrit. carbon dioxide decreases. At const. temp., the soly. of all substances increases with increasing d. At const. d., a rise of temp. results in an increase in soly. This is caused by the increasing vapor pressure of the solid.

=>